



STRATEGIC MISSIONS

**DETER
DEFEND
DEFEAT**

INTEGRATED MISSILE DEFENSE



Naval Surface Warfare Center, Crane Division's (NSWC Crane) Strategic Missions Center combines innovative technical solutions, preeminent facilities, and strategic electronics and sensors to deliver the technology that ensures weapons systems are fully reliable and always available to the Warfighter.

Strategic Missions Center's Integrated Missile Defense (IMD) Thrust Area provides the technology necessary for the military to respond in the face of a threat. Once a threat, or perceived threat, is detected, technologies supported by IMD determine the nature of the threat, its path or direction, and, most importantly – how to engage it.

SUPPORTING THE WARFIGHTER

Strong, ready and available missile defense systems are imperative to national defense. IMD ensures that our Warfighters can deter attacks from potential enemies by providing support for the systems designed to defeat enemy missiles through all phases of flight. Systems such as Terminal High Altitude Area Defense (THAAD), Standard Missile-3 (SM-3), Ground-based Midcourse Defense (GMD) and Patriot Advanced Capability-3 (PAC-3) enable the Warfighter to defend the U.S. and its interests against aggression.

Strategic Missions Center provides nationally recognized leadership in areas such as power systems, miniature and micro-miniature electronics, Anti Tamper (AT) technology, and failure and materials analysis, all of which ensure our military's unmatched strategic defense capabilities against an offensive ballistic missile attack.

PRODUCTS AND SUCCESS STORIES

Missile Defense Agency (MDA) selected Strategic Missions Center to develop a system for transporting its Pathfinder test missiles, which weigh in at 73,000 pounds, from the test site to the production facility at Kodiak Island, Alaska.



Major items developed to support the project included the design of a new transport trailer, motor airlift container, platforms for roll-transfers and an adaptor base to interface with new facilities.

A success story for NSWC Crane, its experts effectively refurbished existing equipment

and provided a practical, cost-effective solution that can be adapted to future programs.

Strategic Missions engineers and scientists also supported MDA by creating a non-invasive scanning process for Ground Safing Device (GSD) Arm/Disarm (A/D) switches, saving the government millions in inspection and removal costs. Through a distinctive new Computed Tomography (CT) x-ray scan process, Foreign Object Debris (FOD) – such as wire clippings, cloth ties or adhesives – is identified inside GSD/AD switches without physically opening the switch. This maintains an increased reliability in the switches at a lower cost.



NAVSEA selected NSWC Crane for its renowned technical expertise to serve as the Technical Warrant Holder (TWH) for the Navy's new AT policy and process. The aim of the Navy's AT Technical Authority is to deter or delay the reverse engineering of Navy systems, which involves open-source attacks on microelectronics, by

integrating protective measure during the development phase of a program. Strategic Missions Center offers NAVSEA's only secured laboratory dedicated to AT technology. Access-control systems, biometrics, electronic barriers and intrusion detection systems are just some of the NSWC Crane solutions securing U.S. assets at home and abroad.



INTEGRATED MISSILE DEFENSE

CUSTOMERS AND PARTNERS

NSWC Crane and MDA continue to ensure that our nation's Ballistic Missile Defense (BMD) system is fully reliable and always available to operate and defend the U.S. and its allies.

Support for MDA includes providing technical, on-site engineering at Raytheon Integrated Defense Systems in Andover, Mass. and Huntsville, Ala., as well as acting as a key technology partner to MDA's X-Band Radar Program Office, supporting the AN/TPY-2 X-Band Radar. NSWC Crane also represents a technical resource for MDA's work in radar, ensuring the agency has a focused, risk-biased approach to identifying the significant elements, phases, operations and/or technical concerns for its systems.

Partnerships with leading organizations supplement the Center's expertise, including:

- Alliant Tech Systems
- Lockheed Martin
- Boeing
- Vanderbilt University
- Orbital Sciences Corporations
- Indiana University
- Penn State University
- Purdue University
- Texas A&M

LEADERSHIP, FACILITIES AND CAPABILITIES

NSWC Crane operates the Department of Defense's (DoD) largest, full-spectrum power system facility. The 131,000 square-foot plant utilizes \$27.6 million of state-of-the-art research, development, test and evaluation equipment – all dedicated to power sources, from researching new materials and processed; to evaluating and testing all types of batteries, fuel cells and uninterruptible power supplies; to assessing converters, inverters and chargers.

NSWC Crane is proud to defend U.S. homeland security with power sources. In response to a study by the National Research Council (NRC) Committee about the Printed Circuit Board (PrCB) industry, the House Armed Services Committee named the Navy as the Executive Agent for PrCB technology, and NSWC Crane was designated as the oversight facility for the effort. Concern emerged because manufacturers of PrCB technology were leaving the U.S., and a production shift could mean this critical infrastructure technology would be purchased from overseas sources.. The PrCBH is the platform upon which microelectronic components are mounted, found in virtually all electronics products used by our nation's fighting men and women.

In addition to NSWC Crane's recognized power sources facilities, NSWC Crane also offers:

- Anti-Tamper Laboratory
- DoD's most complete manufacturing site for Printed Circuit Boards (PrCB)
- High Energy Density Battery Testing
- Failure and Materials Analysis Laboratory

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June 2009

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